

## **REMARKS**

Claims 1 and 8 have been amended for clarification purposes only, claims 2 and 3 have been canceled, and claims 27 and 28 have been added. As such, claims 1, 4-14, and 21-28 are currently pending in the case. Further examination and reconsideration of the presently claimed application are respectfully requested.

### **Allowed Claims**

Applicant acknowledges and appreciates the Examiner's allowance of claims 1-8 and 23-26. As noted above, claims 1 and 8 have been amended for clarifications purposes only. Approval of the amended claims is respectfully requested.

### **Allowable Subject Matter**

Claims 10-14 were objected to as being dependent upon a rejected base claim and were deemed allowable if rewritten in independent form. Applicant sincerely appreciates the Examiner's recognition of the patentable subject matter recited in these claims. However, as will be set forth below, it is believed that claim 9 and claims dependent therefrom (claims 10-14) are patentably distinct from the cited art. Accordingly, removal of this objection is respectfully requested.

### **Section 102 Rejections**

Claims 9, 21, and 22 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Application No. 2001/0040778 to Abraham et al. (hereinafter referred to as "Abraham"). A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. Of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), MPEP 2131. Abraham does not disclose all limitations of the currently pending claims, some distinctive limitations of which are set forth in more detail below.

**Abraham does not disclose alternating steps of etching exposed portions of a stack of layers and implanting dopants into the exposed portions.** Claim 9 recites: “A method for forming a magnetic memory cell junction, comprising: patterning a mask layer above a stack of layers; and alternately etching and implanting dopants into exposed portions of the stack of layers.” To support the anticipation rejection of claim 9, the Examiner cites Figs. 10-13 of Abraham. As noted in a response to a previous Office Action mailed July 19, 2005, none of Figs. 10-13 or the accompanying text of Abraham teach or suggest alternating steps of etching exposed portions of a stack of layers and implanting dopants into the exposed portions. Clear distinctions between the limitations recited in claim 9 and the teachings of Abraham were outlined in the response to the Office Action mailed July 19, 2005 and are reiterated below.

In particular, the methods described in reference to Figs. 10a-10e and 11a-11e outline processes in which a stack of layers is patterned in alignment with a masking layer and an insulating layer is deposited thereafter. There is no teaching or suggestion of dopant implantation within such methods, much less incorporating a dopant implantation process alternately with etching the stack of layers. Consequently, Abraham fails to teach or suggest the limitations of claim 9 in reference to Figs. 10a-10e and 11a-11e. Similarly, the process described in reference to Figs. 12a-12c fails to teach or suggest dopant implantation and, therefore, fails to anticipate the limitations of claim 9. More specifically, Figs. 12a-12c depict a process in which a single layer (i.e., mask 200) is removed and another layer (i.e., free region 424) is deposited in its place. Not only does Abraham fail to teach or suggest dopant implantation within such a process, there is no teaching or suggestion of etching a stack of layers within the method described in reference to Figs. 12a-12c. Consequently, there is no teaching or suggestion of alternating such processes steps in reference to Figs. 12a-12c. Although the method described in reference to Figs. 13a-13c in Abraham includes the implantation of oxygen, there is no teaching or suggestion of etching a stack of layers within such a process, much less alternately with the implantation process. Consequently, the method described in reference to Figs. 13a-13c fails to anticipate the limitations of claim 9.

In response to the arguments presented above, the Examiner cites “figure 10” of Abraham as teaching etching a stack of layers and figure 13a of Abraham as implanting dopants into exposed portions of a stack of layers, the combination of which the Examiner purports as clearly teaching the

limitations of claim 9. Although not clearly specified, it is presumed the Examiner is referencing Fig. 10b in Abraham since such a figure corresponds to etching exposed portions of a stack of layers underlying mask 200. Regardless of the specific figure in Abraham that the Examiner is referencing as “figure 10”, it is asserted that the Examiner has incorrectly interpreted the teachings of Abraham to support a rejection of anticipation against the limitations of claim 9. In particular, Abraham does not teach combining any of the processes described in reference to Figs. 10a-10e with the process described in reference to 13a. More specifically, Abraham teaches “Figs. 10-13 represent alternative techniques for fabricating the structures ...” (paragraph 0046) and further emphasizes their distinction by referencing the processes depicted in Figs. 10a-10e, 11a-11e, 12a-12c, and 13a-13c as different “fabrication embodiments” (see paragraphs 0046-0049).

Furthermore, none of the processes described in reference to Figs. 10a-10e can be combined with the process described in reference to Fig. 13a to meet the limitations of claim 9. In particular, Abraham teaches etching exposed portions of free region 224', tunneling region 222', and reference magnetic region 220' in reference to Fig. 10b. In contrast, Abraham teaches retaining exposed portions of the stack of layers underlying mask 500 in Fig. 13a such that oxygen ions may be implanted into portions of conductive layer 521' to form regions 530<sub>1</sub>' and 530<sub>2</sub>' as shown in Fig. 13b. Consequently, the processes described in reference to Figs. 10b and 13a cannot be combined to teach the limitations of claim 9. Moreover, there is no teaching or suggestion within Abraham of repeatedly conducting etching and implanting processes to form a magnetic cell junction as recited in claim 9. In particular, claim 9 specifically cites alternating steps of etching exposed portions of a stack layers and implanting dopants into the exposed portions. It is noted that Merriam-Webster's Dictionary defines the term “alternate” as ‘to change from one to another repeatedly’. Consequently, claim 9 is patentably distinct from the cited art.

In addition to specifically citing Figs. “10” and 13a of Abraham to refute the arguments presented in the response to the previous Office Action mailed July 19, 2005, the Examiner states on page 3 of the current Office Action that “the features upon which the applicant's relies (i.e., ‘a stack of layers is patterned in alignment with a masking layer and an insulating layer is deposited thereafter’) are not recited in the rejected claim(s).” Applicants concur with the Examiner's statement that such limitations are not recited in the claims of the presently claimed case. Such

features were highlighted as teachings of Abraham in the response to the previous Office Action mailed July 19, 2005, specifically with respect to Figs. 10a-10e and 11a-11e, to show that Abraham fails to teach the limitations of claim 9. As such, the citation of such teachings is relevant to the arguments presented for negating the rejection of claim 9.

For at least the reasons stated above, Abraham fails to teach or suggest the limitations of claim 9. Accordingly, claim 9 and claims dependent therefrom are patentably distinct over the cited art. Accordingly, removal of this rejection is respectfully requested.

#### **Patentability of Added Claims**

The present amendment adds claims 27 and 28. Claims 27 and 28 are dependent from claims 9 and 23, respectively. Accordingly, claims 27 and 28 are patentably distinct from the cited art for at least the same reasons as their base claim. Accordingly, approval of added claims 27 and 28 is respectfully requested.

#### **CONCLUSION**

This response constitutes a complete response to the issues raised in the final Office Action dated February 6, 2006. In view of the remarks herein, Applicants assert that pending claims 1, 4-14, and 21-28 are in condition for allowance. If the Examiner has any questions, comments, or suggestions, the undersigned earnestly requests a telephone conference.

No fees are required for filing this amendment; however, the Commissioner is authorized to charge any additional fees, which may be required, or credit any overpayment, to Daffer McDaniel LLP Deposit Account No. 50-3268/5298-13201.

Respectfully submitted,  
/Mollie E. Lettang/  
Mollie E. Lettang  
Reg. No. 48,405  
Agent for Applicant(s)

Customer No. 35617

Date: May 2, 2006

MEL